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RESEARCH ARTICLE

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Notulae to the Italian flora of algae, bryophytes, fungi and lichens: 8

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Abstract

In this contribution, new data concerning algae, bryophytes, fungi, and lichens of the Italian flora are presented. It includes new records and confirmations for the algae genus *Chara*, the bryophyte genera *Homalia*, *Mannia*, and *Tortella*, the fungal genera *Cortinarius*, *Russula*, and *Stereum*, and the lichen genera *Cetrelia*, *Cladonia*, *Enterographa*, *Graphis*, *Lecanora*, *Lepraria*, *Multiclavula*, *Mycomicrothelia*, *Parmelia*, *Peltigera*, *Pleopsidium*, *Psora*, *Scytinium*, *Umbilicaria*, and *Rhizocarpon*.

Keywords

Ascomycota, Basidiomycota, Bryidae, Charophyceae, Marchantiidae

How to contribute

The text of the records should be submitted electronically to: Cecilia Totti (c.totti@univpm.it) for algae, Marta Puglisi (mpuglisi@unict.it) for bryophytes, Alfredo Vizzini (alfredo.vizzini@unito.it) for fungi, Sonia Ravera (sonia.ravera@unimol.it) for lichens.

Floristic records

Algae

***Chara gymnophylla* A.Braun (Characeae)**

+ **LIG**: Hills near Case Serro, Framura (La Spezia), ditch along a dirt road (UTM WGS84: 32T 542779.4895693), 273 m, 15 March 2019, *D. Dagnino*, *C. Turcato* (GE 639); Magra Valley, Bozi di Saudino lakes, Sarzana (La Spezia), artificial lake (UTM WGS84: 32T 577083.4883397), 5 m, 29 May 2019, *D. Dagnino*, *C. Turcato*, *I. Briozzo* (GE 640); Vara Valley, Sesta Godano (La Spezia), river bank and puddles (UTM WGS84: 32T 551412.4904355), 210 m, 12 July 2019, *D. Dagnino*, *C. Turcato*, *I. Briozzo* (GE 716 and GE 717). – Species new for the flora of Liguria.

This species was found in three Ligurian Special Areas of Conservation (SACs): "IT1343419 Monte Serro" (GE 639), "IT1345101 Piana della Magra" (GE 640) and "IT1343502 Parco della Magra-Vara" (GE 716 and GE 717). These sites show strong

ecological differences: the Monte Serro site is a small puddle in a ditch, few centimeters deep, colonized by a herbaceous hygrophilous plant community within a Mediterranean maquis habitat. The Magra Valley site is an artificial lake, where *C. gymnophylla* is widespread in the shallow waters near the banks, growing strictly associated to *Myriophyllum spicatum* L. The Vara Valley site is a constantly flowing Mediterranean river, where *C. gymnophylla* grows in both running and stagnant water. *Chara gymnophylla* was considered by some authors (e.g., Mouronval et al. 2015) as a variety of *Chara vulgaris* L., because its main diagnostic feature (i.e. rays without cortex) is strongly influenced by growth conditions (Bazzichelli and Abdelahad 2009 and references therein). Moreover, recent genetic analysis suggested that *C. gymnophylla* should be divided into tylacanthous forms (which are closely related to *Chara contraria* A.Braun ex Kützing) and aulacanthous forms (which are related to *C. vulgaris*) (Schneider et al. 2016). Nevertheless, *C. gymnophylla* is currently accepted as valid species (Guiry and Guiry 2019). In Italy, this species has been recorded from Veneto, Umbria, Lazio, and Sicilia (Bazzichelli and Abdelahad 2009).

D. Dagnino, C. Turcato, I. Briozzo, L. Minuto

Chara virgata Kützing (Characeae)

+ **TOS**: Valsora quarry, NW slopes of Monte Pelato, near Passo del Vestito (Massa), standing water in a marble quarry (UTM WGS84: 32T 597874.4880003), 878 m, 27 March 2019, leg. *F. Oneto*, *D. Ottonello*, det. *D. Dagnino D.*, *C. Turcato* (GE 638). – Species new for the flora of Tuscany.

The site of discovery belongs to the protected area "Parco Regionale delle Alpi Apuane", and it is characterized by an old (temporarily inactive) marble quarry, occurring in the north-western slope of Monte Pelato. This species was found in standing waters at the base of the quarry front. *Chara virgata* (formerly *Chara delicatula* C.Agardh) is very similar to *Chara globularis* Thuiller, from which it is distinguished by the features of the stipulodes (well developed and rudimentary in the upper and lower row, respectively), of the spines (papillar), of the bractlets (longer than the oogonia) and for the isostic or tylacanthous cortex (Bazzichelli and Abdelahad 2009). Nevertheless, such morphological features (particularly the stipulodes) are often mixed in the two species, despite they recently resulted clearly genetically differentiated (Schneider et al. 2016). The two species are also quite different in their ecology: *C. virgata* is considered as an indicator of oligotrophic waters, while *C. globularis* is considered as an indicator of eutrophic environments (Blindow 1992; Toivoneh and Huttunen 1995; Krause 1997), although mixed populations of the two species in the same water bodies are known from central Italy (Bazzichelli and Abdelahad 2009) and Poland (Pelechaty et al. 2004). *Chara virgata* is widespread in Europe, Asia and North America (Guiry and Guiry 2019). In Italy, it was reported in Trentino-Alto Adige, Lombardia, Veneto, Friuli Venezia Giulia, Umbria and Lazio (Bazzichelli and Abdelahad 2009).

D. Dagnino, C. Turcato, M.G. Mariotti

Bryophytes

Homalia lusitanica Schimp. (Neckeraceae)

+ **BAS**: Vallone Zifero, Viggianello (Potenza) on soil (UTM WGS84: 33S 591332.4424048), 438 m, 17 August 2001, *D. Puntillo* (CLU No. 3412, 3414). – Species new for the flora of Basilicata.

Homalia lusitanica was described by Schimper (1856) as *Omalia lusitanica* for the Sierra de Sintra in Portugal. It is a species with a Mediterranean-oceanic distribution, restricted to western and southern European countries and North Africa (Ros et al. 2013). It forms green mats on wet, shaded rocks and slopes along streams and on walls of caves from lowland to montane belt. It is easily distinguished from the other species of the genus *Homalia* by the vein extending ¾ to 4/5 of the way up the leaf, the strongly dentate leaf apex and the presence of pseudoparaphyllia along the stem. In Italy, this species is quite common from the north to the south, where it can be found either on wet vertical rocks or at the entrance of caves (Aleffi et al. 2008). In the new site of the Basilicata Region it was collected sterile on a vertical wall with periodic water percolation in a very humid and shaded situation.

D. Puntillo

Mannia pilosa (Hornem.) Frye & L.Clark (Aytoniaceae)

+ **TAA**: Vallunga valley, Selva di Val Gardena, Val Gardena, Puez-Odle Nature Park/ Naturpark Puez-Geisler (Bolzano) 1869 m (UTM WGS 84 32T 713568.5160726), 19 July 2019, *D. Spitale* (Herb. BOZ: BRYO 5055). – Species new for the flora of Trentino-Alto Adige.

Mannia pilosa was found in a small concavity on a vertical dolomite rocks with N-NO aspect. The specimens were characterized by a small thallus, about 5×5 cm wide, showing a single but well developed archegoniophorus; the stalk had many long narrow scales, the epidermis was lacunose and the ventral scales were reddish, characteristics which separate *M. pilosa* from the other species of the genus *Mannia* (Frey et al 2006, Damsholt 2009). Our finding represents the first certain record for Trentino-Alto Adige (Aleffi et al 2008); in fact, the report by Düll (1991) for this Region is reported as doubtful in Aleffi et al. (2008), since it derives from a probable misinterpretation of the data reported in Zodda (1934). *Mannia pilosa* is very rare in Italy, where it was previously reported only for Veneto, Friuli Venezia Giulia (with old reports published before 1950) and Valle d'Aosta. *Mannia pilosa* is an Arctic-Alpine species, scattered in the eastern and central Alps up to 3.200 m a.s.l. and very rare in the western Alps (Frey et al 2006); in Europe, it is rare and restricted to a few northern and central countries where it is considered a threatened species (Hodgetts 2015).

D. Spitale

***Tortella flavovirens* (Bruch) Broth. var. *papillosissima* Sergio & Casas (Pottiaceae)**

+ **PUG**: Torre Guaceto (Brindisi), on loose soil on coastal dunes (UTM WGS84: 33T 734834.4511178), 2 m, 21 April 2016, leg. *V. Tomaselli*, det. *M. Puglisi* (CAT); Lesina (Foggia), on loose soil (UTM WGS84: 33T 529757.4638416), 2 m, 17 April 2018, leg. *V. Tomaselli*, det. *M. Puglisi* (CAT); Torre dell'Orte, Otranto (Lecce), on loose soil in coastal dunes (UTM WGS84: 34T 287684.4446078) 20 m, 23 May 2018, leg. *V. Tomaselli*, det. *M. Puglisi* (CAT). – Variety new for the flora of Puglia.

Tortella flavovirens var. *papillosissima* was described by Sérgio and Casas de Puig (1981) for Estepona (Malaga) and is distinguished from *T. flavovirens* var. *flavovirens* for the upper and mid-leaf cells with papillae 6–8 μm long, not rounded at the tip, more evident in the pericostal cells. This moss is known at present from Spain, Malta, Sicily, and in the Italian peninsula from the Campania Region (Ros et al. 2013, Puglisi et al. 2012), showing a typical Mediterranean distribution area. During a widespread investigation on the bryophyte vegetation of the garrigues of southern Italy, *T. flavovirens* var. *papillosissima* was found in Puglia, representing the second record for the Italian peninsula. The moss was collected from loose soil in dry and more or less exposed places near the sea in the ambit of garrigues with dominance of *Thymbra capitata* (L.) Cav. at Torre Guaceto and Torre dell'Orte, and garrigues with *Halimium halimifolium* (L.) Willk. and *Erica multiflora* L. at Lesina. In these sites it was associated to *Trichostomum brachydontium* Bruch, *T. flavovirens* var. *flavovirens*, *Bryum dichotomum* Hedw., *Didymodon fallax* (Hedw.) R.H.Zander. *Tortella flavovirens* var. *papillosissima* has a phytosociological role, being the characteristic species of the association *Tortelletum papillosissimae* Puglisi 2010 belonging to the alliance *Tortellion flavovirentis* Guerra ex Guerra & Puche, 1984 (Puglisi and Privitera 2012).

M. Puglisi, V. Tomaselli

Fungi

***Cortinarius catharinae* Consiglio (Cortinariaceae)**

+ **CAL**: Orto Botanico Università della Calabria, Rende (Cosenza), on the ground, close to *Quercus pubescens* Willd. and *Quercus cerris* L. trees in a patch of a mixed deciduous coppice stand (UTM WGS84: 33S 605816.4357342), 220 m, 28 November 2018, *G. Sicoli*, *A.B. De Giuseppe*, *N.G. Passalacqua* (CLU No. F305). – Species new for the flora of Calabria.

Cortinarius catharinae is an agaricaceous, terricolous, mycorrhizal fungus, in the subgenus *Phlegmacium* (Fr.) Trog, section *Calochroi* M.M.Moser & Horak ("the *Cortinarius parvus* complex"), clearly distinct from the closest species, *C. albertii* Dima, Frøslev & T.S.Jeppesen and *C. parasuaveolens* (Bon & Trescol) Bidaud, Moënne-Locc.

& Reumaux, due to a strong blood red KOH- reaction on the pileus margin, and to a faint lilac tinge, which was observed only on the upper part of the stipe (not on the pileus and bulb margin), respectively (Vizzini et al. 2012; Brandrud et al. 2018). This species has still locally been reported in Italy, where it should be quite common especially in deciduous oak and mixed-hardwood stands on calcareous soils.

G. Sicoli, A.B. De Giuseppe, N.G. Passalacqua

***Russula innocua* (Singer) Singer (Russulaceae)**

+ **LIG**: Passo delle Salse (Imperia) under *Fagus sylvatica* L., (UTM WGS84: 32T 398071.4884909), 1000 m, 3 August 2019, *F. Boccardo* (Herb. GDOR 4690). – Species new for the flora of Liguria.

Russula innocua, a rare species typical of deciduous woods, is associated mainly with *Fagus sylvatica* L., *Carpinus* and *Tilia*, on rich clayey soil. *Russula innocua* has, as major morphological features, small basidiome, pileus with greenish-green surface, lamellae rather distant, whitish, flesh greying, smell like leaves of *Pelargonium* and spores with isolate spines (Sarnari 1988). In Italy, it has been recorded for Trentino-Alto Adige (Südtirol) and Umbria, in according with Sarnari (1988).

F. Boccardo, F. Dovana

***Stereum subtomentosum* Pouzar (Stereaceae)**

+ **CAL**: Orto Botanico Università della Calabria, Rende (Cosenza), on a dead log of *Quercus pubescens* Willd. in a mixed deciduous coppice stand (UTM WGS84: 33S 605943.4357286), 220 m, 19 November 2018, *G. Sicoli*, *A.B. De Giuseppe*, *N.G. Passalacqua* (CLU No. F306). – Species new for the flora of Calabria.

Stereum subtomentosum is distinguishable from the closest species due to a longer projection (up to 5–6 cm) of the reflexed part of basidiomes, which is also sessile (Jülich 1989, Strid 1997).

G. Sicoli, A.B. De Giuseppe, N.G. Passalacqua

Lichens

***Cetrelia monachorum* (Zahlbr.) W.L.Culb. & C.F.Culb. (Parmeliaceae)**

+ **LIG**: loc. Valletti, Val di Vara, Varese Ligure (La Spezia), on *Castanea sativa* Mill., (UTM WGS84: 32T 543460.4913486), 757 m, 3 January 2018, leg. *P. Giordani*, *D. Locati*, det. *P. Giordani* (GE 2708). – Species new for the flora of Liguria.

Cetrelia monachorum is a large foliose lichen with rounded marginal lobes and an upper surface with whitish pseudocyphellae (Obermayer and Mayrhofer 2007). It is distinguished from the other taxa of the *Cetrelia olivetorum* group by some morphological characters (e.g., the shape of the pseudocyphellae) and by its chemical charac-

teristics, such as the presence of the imbricaric acid syndrome (major) and perlatolic acid (minor). According to Nimis (2016), it is probably the most common species of *Cetrelia* in Italy, but knowledge on its distribution is still scarce. On this basis, Nascimbene et al. (2013) included it in the Italian Red List of epiphytic lichens as "Data Deficient". In Italy it was previously known for some places in the eastern Alps (Obermayer and Mayrhofer 2007, Nascimbene 2014, Nascimbene and Marini 2015). In the Ligurian locality, which is so far the southernmost in Italy, the species was found on epiphytic bryophytes at the base of chestnut trunks in an abandoned chestnut grove.

P. Giordani

Cladonia botrytes (K.G.Hagen) Willd. (Cladoniaceae)

– **LOM**: *Sulla terra dei Colli di Niardo* (on the soil of the mounts of Niardo), Niardo (Brescia), ante 1893, *E. Rodegher* (PAV). – Species to be excluded from the flora of Lombardia.

Baroni (1893), describing a lichen collection made by Emilio Rodegher, reported *Cladonia botrytes* for Niardo in Val Camonica. The only known lichen herbarium by Emilio Rodegher is currently preserved in PAV, and it fully corresponds with the species list reported by Baroni (1893). Two specimens in the herbarium by Rodegher, collected in two localities of Val Camonica (one in the mountains of Niardo and the other in Mount Concarena), are labelled under «*Cladonia botrytes*», but they are both instead fertile specimens of *Cladonia squamosa* Hoffm. It can be inferred that Rodegher had an erroneus concept of «*Cladonia botrytes*». The other citations of this species for Lombardia are those by Giacomini (1936) and Dalle Vedove et al. (2004), but these authors did not report new records of the species only citing the previous record by Baroni (1893). The same is for Nimis (1993, 2016). Therefore, even if habitat conditions suitable for this species (cf. Bogomazova 2012; Yahr et al. 2013) can be found in the region, *Cladonia botrytes* should be excluded from Lombardia.

G. Gheza

Cladonia pseudopityrea Vain. (Cladoniaceae)

+ **TOS**: Pian degli Ontani (Pistoia), on bark at the base of a chestnut tree (UTM WGS84: 32T 637474.4884316), 1033 m, 29 September 2018, *G. Gheza* (Herb. Gheza, GZU). – Species new for the flora of Toscana.

Cladonia pseudopityrea is a rare species in Europe, where it has a scattered distribution in the Mediterranean area (Ahti and Puntillo 1995). Its taxonomic position against the strictly related *Cladonia ramulosa* (With.) J.R.Laundon is unclear (T. Ahti, pers. comm.). It has been reported in Italy so far only from Sardegna and Calabria (Nimis 2016), and this is the first record from central Italy. It is also the first record of this species on *Castanea sativa* Mill. *Cladonia pseudopityrea* is mainly lignicolous, but it can also be epiphytic, and occurs usually in rather moist woodlands. It is included in the Red List of Italian epiphytic lichens as endangered (Nascimbene et al. 2013).

G. Gheza, J. Nascimbene, H. Mayrhofer

Enterographa zonata (Körb.) Källsten ex Torrente & Egea (Roccellaceae)

+ **BAS**: Cerro Falcone, Calvello (Potenza) on acid rock (UTM WGS84: 33T 567880.4479043), 1066 m, 16 November 2003, *D. Puntillo*, *G. Potenza* (CLU No. 13214). – Species new for the flora of Basilicata.

Enterographa zonata has a thallus thin to moderately thick, violet-tinged chocolate-brown with a conspicuous, black marginal prothallus, rare apothecia, speckled with dot-like dark brown soredia that become abraded and pale. It is a rather rare to extremely rare species in Italy (Nimis 2016), usually found on vertical to underhanging surfaces of hard siliceous rocks and in woodlands, forming mosaics generally in humid habitats under overhangs. All the specimens collected in Southern Italy (Calabria and Basilicata) currently stored in CLU are devoid of apothecia.

D. Puntillo, G. Potenza

Graphis pulverulenta (Pers.) Ach. (Graphidaceae)

+ **VEN**: *Ad Cerasorum corticem in collibus ditionis Bassanensis* (on the cortex of cherry trees on the hills dominating Bassano del Grappa), Bassano del Grappa (Vicenza) (UTM WGS 84: 32T 707293.5071093), 1869, *V. Trevisan*, det. *S. Martellos*, *M. Zardini* (Museo di Storia Naturale di Venezia No. MSNVE-25000 under the name *Opegrapha scripta* Ach. var. *recta* Schaer.). – Species new for the flora of Veneto.

Neuwirth and Aptroot (2011) have proposed a new taxonomy for *Graphis scripta* s.lat., recognizing four distinct taxa: *G. betulina* (Pers.) Ach., *G. macrocarpa* (Pers.) Röhl., *G. pulverulenta* (Pers.) Ach., and *G. scripta* (L.) Ach. s.str. A more recent study based on both molecular and morphological characters (Kraichak et al. 2015) showed that, although between six and seven putative species are nested within the complex, these do not fully correspond to the taxa that were recently distinguished based on apothecium morphology. Pending a revision of the Italian material, Nimis (2016) treats *G. scripta* in a broad sense, while the few recent records of the species delimited by Neuwirth and Aptroot (2011) are provisionally treated as separate units. *Graphis pulverulenta* is a crustose lichen of the *G. scripta* group, characterised by apothecia with mostly acute ends and widely exposed white- to grey-pruinose discs, found on the bark of broad-leaved trees in various forest types. In Italy it is known to occur in Friuli Venezia Giulia, Trentino-Alto Adige, Lombardia, Piemonte, and Puglia (Nimis 2016). The specimen is the number 210 of Lichenotheca Veneta, a collection of exsiccata produced in 1869 by Vittore Benedetto Antonio Trevisan (1818–1897), and published in a limited number of copies. The specimen is preserved at the Natural History Museum of Venice, in one of the only two copies of the Lichenotheca Veneta known to still exist in a complete form. The apothecia have a widely open, bluish grey pruinose disc and no thalline margin, which are typical features of *Graphis pulverulenta*.

S. Martellos, P.L. Nimis, R. Trabucco, J. Nascimbene, M. Zardini

***Lecanora thysanophora* R.C.Harris (Lecanoraceae)**

+ **FVG**: Trieste Karst, Dolina di Percedol, Monrupino/Repen (Trieste), on *Carpinus betulus* L. in Asaro-Carpinetum betuli (UTM WGS84: 33T 406900.5062000), ca. 275 m, 27 March 2019, *P.L. Nimis*, *E. Pittao* (TSB No. 41071); Carnic Alps, Lake of Sauris, Bosco della Stua (Udine), on *Abies alba* Mill. in very humid forest (UTM WGS84: 33T 325300.5145650), c. 1020 m, 30 July 2002, leg. *M. Tretiach*, rev. *P.L. Nimis*, 30 August 2019 (TSB No. 36066). – Species new for the flora of Italy.

Lecanora thysanophora is a sorediate, mostly sterile epiphytic species described from North America and firstly reported from Europe (Tønsberg 1999, Harris et al 2000), which has been often confused with sterile specimens of the mainly epilithic *Haematomma ochroleucum* var. *ochroleucum*. Both species, when sterile, are extremely similar, and also have a similar chemistry, as they produce atranorin, usnic acid, and zeorin, but *L. thysanophora* also contains a characteristic set of terpenoids ("thysanophora-unknowns") and (at least in European specimens) lacks porphyrilic acid, which is present in *H. ochroleucum* (Kukwa and Motiejūnaitė 2005). Furthermore, the soredia of *L. thysanophora* are ca. 25 µm wide, while those of *Haematomma* are 30–120 µm wide, and the prothallus of *L. thysanophora* is often zoned, its hyphae being 4–5(-5.5) µm thick, while the prothallus of *Haematomma* is not zoned, and the hyphae are 3–3.5(-4) µm thick (Wirth et al. 2013). Although *H. ochroleucum* may occur also on bark, it is primarily an epilithic species of siliceous rocks, while all previous records from Friuli Venezia Giulia were on bark, based on samples from the two localities cited above; thus, this species should be excluded from the lichen biota of the Region. We suspect that several earlier records of *H. ochroleucum* from the Alps could be referred to *L. thysanophora*.

P.L. Nimis, E. Pittao

***Lepraria borealis* Loht. & Tønsberg (Stereocaulaceae)**

+ **TAA**: Val di Roia (Bolzano), on siliceous soil (UTM WGS84: 32T 613293.5182546), 2504 m, 19 July 2018, leg. *D. Spitale*, det. *H. Mayrhofer*, *J. Nascimbene*, *G. Gheza* (Herb. Nascimbene, JN6429); Val di Mazia (Bolzano), on siliceous soil (UTM WGS84: 32T 624485.5183334), 2608 m, 18 July 2018, leg. *D. Spitale*, det. *H. Mayrhofer*, *J. Nascimbene*, *G. Gheza* (Herb. Nascimbene, JN5792); Val di Roia (Bolzano), on siliceous soil (UTM WGS84: 32T 613080.5182281), 2704 m, 19 July 2018, leg. *D. Spitale*, det. *H. Mayrhofer*, *J. Nascimbene*, *G. Gheza* (Herb. Nascimbene, JN6433); Val Martello (Bolzano), on siliceous soil (UTM WGS84: 32T 630870.5158008) 2908 m, 25 July 2019, leg. *D. Spitale*, det. *H. Mayrhofer*, *J. Nascimbene*, *G. Gheza* (Herb. Nascimbene, JN6481). – Species new for the flora of Trentino-Alto Adige.

Lepraria borealis is a circumboreal species dwelling on siliceous rock and soil in the mountain belt (Nimis 2016). It is reported with only few scattered records from the Alps (Nimis et al. 2018) and elsewhere in Italy (Nimis 2016), where it was found only

recently (Baruffo et al. 2006). It has a granular whitish thallus, which can resemble that of *Dibaeis baeomyces* (L.f.) Rambold & Hertel, but it has a different chemistry. The specimens analyzed by means of TLC contained rangiformic acid and atranorin.

C. Vallese, H. Mayrhofer, J. Nascimbene, D. Spitale, G. Gheza

***Lepraria crassissima* (Hue) Lettau (Stereocaulaceae)**

+ **LOM**: trail between Pianezza and Diga del Gleno, Vilminore di Scalve (Bergamo), on a steep siliceous rock cliff at the edge of the trail (UTM WGS84: 32T 583583.5095828), 1529 m, 30 April 2018, leg. *G. Gheza*, det. *H. Mayrhofer*, *J. Malíček* (Herb. Gheza, GZU). – Species new for the flora of Lombardia.

Lepraria crassissima is a misunderstood and overlooked species which was reported so far in Italy only from Friuli Venezia Giulia, Emilia-Romagna, and Toscana (Baruffo et al. 2006). It grows mainly on siliceous rock, as the specimen reported here, but can occur also on calcareous rock (Baruffo et al. 2006). The analyzed specimen contained divaricatic and nordivaricatic acids as major compounds, and zeorin and atranorin in traces. It was collected in proximity of other *Lepraria* species, i.e. *Lepraria finkii* (B. de Lesd.) R.C.Harris and *Lepraria vouauxii* (Hue) R.C.Harris, which grew on the same rock cliff at the edge of the trail.

G. Gheza, H. Mayrhofer

***Multiclavula mucida* (Pers.) R.H.Petersen (Clavulinaceae)**

+ **FVG**: Carnic Alps, Foresta di Ampezzo (Udine), below Passo Pura along the road to the Lake of Sauris, on a rotting stump in humid beech forest (UTM WGS84: 33T 326100.5144200), ca. 1340 m, 26 July 2019, *P.L. Nimis*, *E. Pittao* (TSB No. 41073). – Species new for the flora of Friuli Venezia Giulia.

Multiclavula mucida is one of the few lichenized basidiomycetes occurring in Italy, mostly growing on rotting stumps. It has been largely neglected by lichenologists, especially due to its ephemeral fruiting bodies, being hitherto known only from Veneto and the Apennines in the Emilia-Romagna region (Nimis 2016), but it is likely to be more widespread, being known, for example, from almost all of the Austrian Alps (Nimis et al. 2018).

P.L. Nimis, E. Pittao

***Mycomicrothelia confusa* D.Hawksw.**

+ **PUG**: Strada provinciale San Vito (Brindisi), on *Tilia* sp. (UTM WGS84: 33T 747163.4503018), 25 m, leg. *G. Arosio*, det. *S. Ravera* (Herb. Ravera). – Species new for the flora of Puglia.

This epiphytic species (non- or doubtfully lichenised) colonizes smooth bark of deciduous trees in shaded-humid habitats, mostly in the Thyrrenian side of Italy (Nimis 2016). It is characterized by a prominent white thallus and by numerous, black, ± glo-

bose perithecia surrounded by a minute fringe. It is easy recognizable compared to other Pyrenocarpales by the ascospores, which are brown when mature, 1-septate, constricted at the septum to produce two unequally-sized cells. Although it is considered very rare in Italy (Nimis 2016), it is certainly more widespread than generally believed, but penalized during field observations due to its scarce visibility, as it consists of tiny black spots.

S. Ravera, G. Arosio

***Parmelia omphalodes* (L.) Ach. (Parmeliaceae)**

+ **BAS**: Monte Volturino, Marsicovetere (Potenza), on siliceous rocks (UTM WGS84: 33T 569330.4472730), 1533 m, 11 July 2019, *G. Potenza*, *L. Rosati*, *S. Fascetti* (HLUC No. 804); Il Ciglio, Monte Serranetta, Pignola (Potenza), on siliceous rocks (UTM WGS84: 33T 33T 568937.4490258), 1427 m, 20 June 2019, *G. Potenza*, *L. Rosati* (HLUC No. 801). – Species new for the flora of Basilicata.

This species is mostly distributed in alpine and mountainous areas of Europe, North America, and Asia (GBIF.org 2018). In Italy, it is common in the Alps, where it can reach the nival belt, less common in the mountains of southern Italy; in particular, it is rarer in the highest peaks of the Apennines for the paucity of suitable substrata (Nimis 1993, 2016).

Giovanna Potenza, Simonetta Fascetti, Leonardo Rosati, Domenico Puntillo

***Peltigera degenii* Gyeln. (Peltigeraceae)**

+ **VDA**: Gran Paradiso National Park, Valsavarenche (Aosta), on siliceous rock cover by mosses (UTM WGS84: 32T 360250.5045832), 1932 m, 18 July 2018, leg. *C. Vallese*, det. *R. Benesperi*, *C. Vallese* (Herb. Benesperi). – Species new for the flora of Valle d'Aosta.

Peltigera degenii is a foliose terricolous species growing on mossy rocks in forest and on soil rich in humus (Nimis 2016). It is mainly distributed in the Holarctic Kingdom (Martínez et al. 2003), with an optimum in the mountain belt (Nimis et al. 2018). *Peltigera degenii* is characterized by the absence of lichen substances. It may be distinguished by a glossy, glabrous upper surface with membranous lobe and by a pale brown to whitish lower surface with narrow veins and simple rhizines (Goffinet et al. 1994; Vitikainen 1994). In general, this species is not hard to distinguish from other species of the genus *Peltigera*. Nevertheless, according to Goward et al. (1995), some confusion may emerge with rare glabrous specimens of *Peltigera membranacea* (Ach.) Nyl., but in this species veins and rhizines are always erect-tomentose.

C. Vallese, J. Nascimbene, R. Benesperi

***Pleopsidium chlorophanum* (Wahlenb.) Zopf (Acarosporaceae)**

+ **BAS**: Monte Volturino, Marsicovetere (Potenza), on siliceous rocks (UTM WGS84: 33T 569330.4472730), 1533 m, 11 July 2019, *G. Potenza*, *L. Rosati*, *S. Fascetti* (HLUC No. 807). – Species new for the flora of Basilicata.

Pleopsidium chlorophanum is an arctic-alpine, bipolar species reported from the Holarctic region, as well as from many sites in the Antarctic (Nimis et al. 2018). This lichen grows on sunny dry places exposed to wind, usually on vertical and overhanging surfaces of metal-rich siliceous rock (Nimis et al. 2018). In Italy it has been reported above treeline, reaching the nival belt in the Alps, where it is widespread and locally abundant, extending southwards to the mountains of Sicilia (Nimis 1993, 2016, Wirth et al. 2013).

G. Potenza, S. Fascetti, L. Rosati, D. Puntillo

***Psora vallesiaca* (Schaer.) Timdal (Psoraceae)**

+ **TOS**: Anticlinale di Monsummano (Pistoia), on limestone outcrops along the path to Monsummano Alto (UTM WGS84: 32T 647153.4858836), 127 m, 30 march 2019, leg. *L. Di Nuzzo*, *E. Bianchi*, *R. Benesperi*, det. *L. Di Nuzzo* (Herb. Benesperi). – Species confirmed for the flora of Toscana.

Psora vallesiaca is a squamulose lichen, with brown squamules, white up-turned margins and K+ yellow turning red medulla. It grows both on calcareous soils and rocks. This unit has been attributed to various names, and its nomenclatural position has been clarified only recently (Timdal 1984, 1991). The only report of this specie for Toscana was by Baglietto (1871, under the name *Psora albilabra* (Dufour) Körb.), basing on material collected by Beccari in 1862 in Asciano (FI). We checked this herbarium specimen and confirmed its correspondence with *P. vallesiaca*.

L. Di Nuzzo, R. Benesperi, E. Bianchi

***Rhizocarpon alpicola* (Wahlenb.) Rabenh. (Rhizocarpaceae)**

+ **TAA**: Valle Aurina, 3 km NE of Casere fraz. di Predoi (Bolzano), on siliceous boulder (UTM WGS84: 33T 283639.5216407), 2000 m, 19 July 2009, *J. Malíček* (Herb. Malíček no. 2321). – Species confirmed for the flora of Trentino-Alto Adige.

Rhizocarpon alpicola is a crustose species with a more or less yellow areolate thallus. It grows mainly on hard siliceous rocks with a preference for cold situations in late-snow areas. Its distribution in Italy is currently limited to the alpine and subalpine belts of the Alps (Nimis 2016), with a single record from the northern Apennines dating back to the early 1900s (Zanfrognini 1902), and a few recent Italian records (Nimis 2016). Reports from Trentino-Alto Adige date back to the 19th century and the to the first half of the 20th century (Arnold 1879, Torre and Sarnthein 1902, Cengia-Sambo 1935). The specimen reported here shows 1-septate ascospores without transverse septa, which may, however, occasionally be present in this species.

J. Malíček, S. Ravera

***Scytinium palmatum* (Huds.) Gray (Collemataceae)**

+ **BAS**: Il Ciglio, Monte Serranetta, Pignola (Potenza), on siliceous rocks (UTM WGS84: 33T 568937.4490258), 1427 m, 20 June 2019, *G. Potenza*, *L. Rosati* (HLUC No.803). – Species new for the flora of Basilicata.

This species is bipolar and reported from Europe, eastern Asia, Australasia, and west coast of North America (GBIF.org 2018). In Italy it is considered mainly as a Tyrrhenian mild-temperate lichen, found amongst terricolous or epilithic mosses in areas with siliceous substrata, sometimes on soil (Nimis 1993, 2016), seemingly most frequent in the western and southern Alps (Nimis et al. 2018).

G. Potenza, S. Fascetti, L. Rosati, D. Puntillo

***Umbilicaria decussata* (Vill.) Zahlbr. (Umbilicariaceae)**

+ **BAS**: Monte Volturino, Marsicovetere (Potenza), on siliceous rocks (UTM WGS84: 33T 569330.4472730), 1533 m, 11 July 2019, *G. Potenza*, *L. Rosati*, *S. Fascetti* (HLUC No. 808). – Species new for the flora of Basilicata.

Umbilicaria decussata is a cosmopolitan species reported from Europe, Asia, Africa, North and South America, Australasia, and Antarctica (GBIF.org 2018). It is found on steeply inclined to slightly underhanging surfaces of wind-exposed siliceous rocks; it can reach the nival belt in the Alps and it is also reported from the mountains of Calabria (Nimis 1993, 2016).

G. Potenza, S. Fascetti, L. Rosati, D. Puntillo

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